

FEB 15 2008

I. AMENDMENT TO THE CLAIMS:

Please amend the claims as follows:

Claim 1. **(cancelled)**

Claim 12. **(new)** A holder for maintaining substrates in an array in a programmable matrix in which the substrates in a batch are subjected to a high throughput combinatorial materials deposition process comprising:

a block assembly formed from a face plate, middle block and a removable rear retainer plate attached in parallel in a serial sequence and aligned with each other along a common center axis,

a plurality of cylindrical chambers arranged in an array within the block assembly, the chambers formed within and extending perpendicularly through the face plate and the middle block, wherein the front facing section of the chamber formed within the face plate includes a circular cut out with a predetermined diameter and the section of the chamber formed within the block assembly has a diameter greater than the diameter of the cut out in the face plate,

a plurality of removable cylindrical electrodes aligned in a plane, each electrode maintained separately in a chamber and having a diameter less than the diameter of the chamber, the front end of each electrode facing the face plate and adapted to receive thereupon a deposition of material, the rear end of each electrode facing the retainer plate,

for each electrode, a spring in the chamber extending from the rear end of the electrode to the front facing interior side of the retainer plate, the spring forcibly

Application 10/800,553; filed on March 15, 2004, "HOLDER FOR SAMPLE MATERIALS ..."
RESPONSE AND AMENDMENT TO THE OFFICE COMMUNICATION MAILED ON MAY 16, 2007
Page 2 of 11

COLUMBUS/1416025 v.01

maintaining the front end of each electrode against the cut out section of the face plate,

a ring intrinsically extending inward in a section of the chamber in the block assembly, the ring longitudinally separating the chamber between a front facing electrode holding section and a rear facing spring holding section,

the holder being mountable on a programmable x-y table in a PVD chamber and being movable with respect to a plasma gun array such that each electrode receives a deposition of material thereupon during the processing of the electrodes in accordance with a programmed combinatorial material sequence,

the electrodes being removable from the assembly after the completion of processing.

Claim 2. **(cancelled)**

Claim 3. **(currently amended)** The holder of claim [4] 12 [~~or claim 2~~] in which the chambers [~~substrates~~] are arranged in columns and rows in a matrix in the block assembly.

Claim 4. **(currently amended)** The holder of claim 3 in which the relationship of the number, (N), of chambers [~~substrates~~] in the rows to the number, (N), of chambers [~~substrates~~ ~~(N)~~] in the columns is $rows_N = columns_N$.

Application 10/800,553; filed on March 15, 2004, "HOLDER FOR SAMPLE MATERIALS ..."
RESPONSE AND AMENDMENT TO THE OFFICE COMMUNICATION MAILED ON MAY 16, 2007
Page 3 of 11

COLUMBUS/1416025 v.01

Claim 5. **(currently amended)** The holder ~~[system]~~ of claim 3 in which the relationship of the number, N, of chambers ~~[substrates]~~ in one column to ~~[of]~~ the number of chambers ~~[substrates]~~ in an adjacent column is chambers ~~[substrates]~~ in column_N = N and substrates in column_{N+1} ~~[N+1]~~ = N+1.

Claim 6. **(currently amended)** The holder ~~[system]~~ of claim 3 in which the relationship of the number, N, of chambers ~~[substrates]~~ in one row to ~~[of]~~ the number of chambers ~~[substrates]~~ in an adjacent row is chambers ~~[substrates]~~ in row_N = N and chambers ~~[areas]~~ in row N-1 ~~[N-1]~~ = N-1.

Claim 7. **(cancelled)**

Claim 8. **(cancelled)**

Claim 9. **(currently amended)** The holder of claim [8] 12 including a mask interposed between the front end of the electrode and the face plate in which ~~[upper surface of the electrode]~~ the mask is inset within the chamber ~~[block]~~ such that the transverse cross-section area of an opening in the mask ~~[upper surface of the column in the block in which the electrode is positioned]~~ is less than the transverse cross-section area of the upper surface of the electrode.

Claim 10. **(cancelled)**

Claim 11. **(cancelled)**

Application 10/800,553; filed on March 15, 2004, "HOLDER FOR SAMPLE MATERIALS ..."
RESPONSE AND AMENDMENT TO THE OFFICE COMMUNICATION MAILED ON MAY 16, 2007
Page 4 of 11

COLUMBUS/1416025 v.01

Claim 13. **(new)** The holder of claim 12 or claim 9 in which the surface of the face plate includes a circumferential chamfer longitudinally aligned with a chamber wherein the chamfer narrows in diameter as the chamfer extends from the front side of the face plate inward toward the face of the electrode.

Claim 14. **(new)** The holder of claim 12 or claim 9 wherein the face plate includes a circumferential recess extending therein from the side of the face plate facing the block through a portion of the thickness of the face plate, the recess being approximately the diameter of the electrode and being adapted to receive therein the front end of the electrode.

Claim 15. **(new)** The holder of claim 12 or claim 9 wherein the electrode comprises an assembly that includes an outer casing surrounding a cylindrical section of material upon which the combinatorial materials are to be deposited.

Claim 16. **(new)** The holder of claim 12 or claim 9 wherein the spring is maintained within a cylindrical retainer capsule having a top surface facing the rear end of the electrode and an open bottom end from which the spring protrudes.

Claim 17. **(new)** The holder of claim 16 wherein the retainer capsule for the spring includes a flange at the rear facing end thereof, the flange adapted to prevent upward movement of the retainer capsule for the spring in the chamber beyond the ring.

Application 10/800,553; filed on March 15, 2004, "HOLDER FOR SAMPLE MATERIALS ..."
RESPONSE AND AMENDMENT TO THE OFFICE COMMUNICATION MAILED ON MAY 16, 2007

Page 5 of 11

COLUMBUS/1416025 v.01